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58. (Twice Amended) The prepreg according to claim 55, wherein the frictional resistance between the stiffness-treated prepreg ply and the second prepreg ply is between 75 pounds and 175 pounds as measured by the Boeing-Wilhelm method.

59. (Twice Amended) The prepreg according to claim 55, wherein the frictional resistance between the stiffness-treated prepreg ply and the second prepreg ply is between 100 pounds and 150 pounds as measured by the Boeing-Wilhelm method.

REMARKS

The claims now pending in the application are Claims 1 to 12, 39 to 46, 55, 57 to 59, 65 to 76 and 87, the independent claims being Claims 1, 39, 55, 65 and 68. Claims 1 to 12, 39 to 46, 60 to 76 and 87 have been withdrawn from consideration pursuant to a prior restriction requirement and provisional election. Claims 55 and 57 to 59 have been amended.

In the Official Action dated June 20, 2001, Claims 57 to 59 were objected to on formal grounds under 35 U.S.C. § 1.75(c), as improperly dependent. Claim 55 was rejected under 35 U.S.C. § 102(e), as anticipated by or, in the alternative under 35 U.S.C. § 103(a), as obvious over U.S. Patent No. 5,895,699 (Corbett). Reconsideration and withdrawal of the objection and rejections respectfully are requested in view of the above amendments and the following remarks.

Initially, Applicants' attorney gratefully acknowledges the courtesies extended to him by Examiner Befumo and Supervisory Examiner Juska in granting a

personal interview on October 17, 2001. In that interview, Applicants' attorney discussed various novel features of the present invention, and distinguished the claimed invention over the cited art. Initially, Applicants' attorney acknowledged that the Corbett '699 patent is representative of the state of the art prior to Applicants' invention, and is described in the "Background of the Invention" portion of the present application. Applicants' attorney noted the Corbett '699 patent teaches a honeycomb core structure that uses tiedown plies 150 and 175, in which the peripheral edges of the tiedown plies are anchored (e.g., taped to a workpiece) to prevent movement thereof, and the tiedown plies are provided extending through the lay-up of a honeycomb core structure precursor in order to prevent relative slippage between the honeycomb core 106 and various plies during autoclaving, which slippage results in core crush. In particular, the Corbett '699 patent teaches and claims the use of a peripheral intermediate ("picture frame") tiedown ply 150 that overlaps a chamfer portion 155 of the honeycomb core 106. Applicants' attorney then noted that the present application discloses and claims a honeycomb core structure precursor comprising a stiffness treated prepreg ply including a stiffness treated fabric having an ASTM stiffness value sufficiently greater than that of a non-stiffness treated fabric, so as to eliminate the need for such costly, time and labor intensive tiedown plies. It was agreed that Applicants would propose claim amendments to clarify this distinction.

The rejection of Claim 55 over the cited art respectfully is traversed. Nevertheless, without conceding the propriety of the rejection, Claim 55 has been amended herein more clearly to recite various novel features of the present invention, with particular attention to the Examiner's comments, as discussed in the personal interview. Support for

the proposed amendments may be found in the original application. No new matter has been added.

Specifically, independent Claim 55 has been amended to recite a prepreg of a honeycomb sandwich structure precursor including a honeycomb core, a stiffness-treated prepreg ply and a second prepreg ply, in the absence of a tiedown ply contacting the honeycomb core, and where the stiffness-treated prepreg ply and the second prepreg ply are disposed adjacent one another; also the “wherein” clause has been amended to eliminate the “wherein” terminology, and to directly recite the features therein. Support for these features may be found in the present application, for example, in Figs. 2A and 3, and the corresponding written disclosure; see, e.g., the disclosure at page 43, lines 24 to 28, wherein the application discloses an embodiment in which the prepreg plies are provided in direct contact with one another in the edgeband E of the honeycomb core structure precursor.

Applicants submit that the prior art fails to anticipate the present invention. Moreover, Applicants submit that there are differences between the subject matter sought to be patented and the prior art, such that the subject matter taken as a whole would not have been obvious at the time the invention was made to one of ordinary skill in the art.

Specifically, Applicants submit that the Corbett ‘699 patent fails to disclose or suggest at least the features of a honeycomb sandwich structure precursor including a honeycomb core, a stiffness-treated prepreg ply and a second prepreg ply, in the absence of a tiedown ply contacting the honeycomb core, and where the stiffness-treated prepreg ply and the second prepreg ply are disposed adjacent one another, the stiffness-treated prepreg

ply . . . exhibiting a frictional resistance between the stiffness-treated prepreg ply and the second prepreg ply sufficiently greater than the frictional resistance between two untreated prepreg plies disposed on one another, . . . so as to enhance resistance to core crush during fabrication of a honeycomb core structure from the honeycomb core structure precursor, as disclosed and claimed in the present application. Rather, the Corbett '699 patent teaches a honeycomb core structure that requires the presence of at least one tie down ply 150 in contact with the honeycomb core 106 along a chamfer 155 thereof; moreover, Applicants submit that it would not be obvious to modify the Corbett '699 patent structure to eliminate the at least one tiedown ply 150, because the Corbett '699 patent teaches "this tiedown system fails without the 'picture frame' ply." (See Column 5, lines 49 to 51 and Column 6, lines 4 to 19 and 38 to 45.)

For the above reasons, Applicants submit that independent Claim 55 is allowable over the Corbett '699 patent.

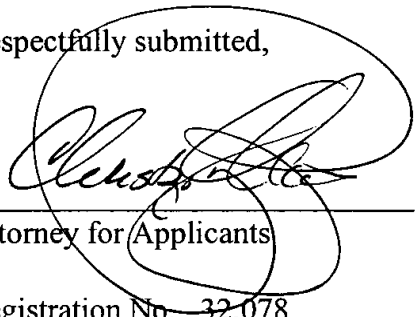
Applicants have reviewed the remaining art of record and submit that the references of record, alone or in any combination, fail to remedy the deficiencies of the Corbett '699 patent, or to add anything to the Corbett '699 patent that would make obvious the claimed invention.

Dependent Claims 57 to 59 have been amended to depend from independent Claim 55, and are believed allowable for the same reasons. Moreover, each of these dependent claims recites additional features in combination with the features of independent Claim 55, and is believed allowable in its own right. Individual consideration of the dependent claims respectfully is requested.

Applicants believe that the present Amendment is responsive to each of the points raised by the Examiner in the Official Action, and submit that the application is in allowable form. Favorable consideration of the claims and passage to issue of the present application at the Examiner's earliest convenience earnestly are solicited.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,



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VERSION WITH MARKS TO SHOW CHANGES MADE TO CLAIMS

55. (Twice Amended) A prepreg of a honeycomb sandwich structure precursor including a honeycomb core, a stiffness-treated prepreg ply and a second prepreg ply, in the absence of a tiedown ply contacting the honeycomb core, and where the stiffness-treated prepreg ply and the second prepreg ply are disposed adjacent one another, said stiffness-treated prepreg ply comprising:

a stiffness-treated fabric including a plurality of fibers and a polymeric material disposed on at least some of the fibers, where the stiffness-treated fabric exhibits an ASTM stiffness value greater than the ASTM stiffness value of an untreated fabric; and

a resin system,

[wherein] the stiffness-treated prepreg ply, when disposed on the [a] second prepreg ply comprising a resin system and a fabric selected from the group consisting of the stiffness-treated fabric and untreated fabrics, exhibiting [exhibits] a frictional resistance between the stiffness-treated prepreg ply and the second prepreg ply sufficiently greater than the frictional resistance between two untreated prepreg plies disposed on one another, where each of the two untreated prepreg plies comprises the resin system and an untreated fabric, so as to enhance resistance to core crush during fabrication of a honeycomb core structure from the honeycomb core structure precursor.

57. (Twice Amended) The prepreg according to claim 55 [56], wherein the frictional resistance between the stiffness-treated prepreg ply and the second prepreg ply is between 50 pounds and 175 pounds as measured by the Boeing-Wilhelm method.

58. (Twice Amended) The prepreg according to claim 55 [56], wherein the frictional resistance between the stiffness-treated prepreg ply and the second prepreg ply is between 75 pounds and 175 pounds as measured by the Boeing-Wilhelm method.

59. (Twice Amended) The prepreg according to claim 55 [56], wherein the frictional resistance between the stiffness-treated prepreg ply and the second prepreg ply is between 100 pounds and 150 pounds as measured by the Boeing-Wilhelm method.

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